Amendments to the Claims

C1
B1

1. **(currently amended)** A saturable reflector apparatus comprising:
a) an etalon comprising two opposing surfaces;~~ at least partially provided by~~
b) a substrate comprising a modified surface and a second surface~~ and at least one modified surface of two surfaces of said substrate~~; and
c) ~~b)~~ a reflector deposited on said second surface of said substrate, ~~one of said two surfaces that opposes said modified surface~~
wherein said reflector and said modified surface form said two opposing surfaces of said etalon, wherein said substrate is interposed between said two opposite surfaces, ~~such that an impinging light beam is initially propagating through said reflector and said substrate before reaching said at least one modified surface,~~ wherein the reflector includes a saturable absorber layer.

2. (original) The apparatus of claim 1 wherein the modified surface has been polished.

3. (original) The apparatus of claim 1 wherein the modified surface includes a coating.

4. (original) The apparatus of claim 3 wherein the coating includes a metallic or a dielectric material.

C1
B2

5. **(currently amended)** The apparatus of claim 1, further comprising means for tuning ~~the~~ an etalon effect of the etalon.

6. **(currently amended)** The apparatus of claim 5 wherein the tuning means comprise means for adjusting an optical thickness between the ~~front and back~~ two opposing surfaces.

7. (previously amended) The apparatus of claim 6 wherein the adjusting means comprises a heat transfer element thermally coupled to the substrate via said modified surface, wherein the heat transfer element is chosen from the group consisting of heater elements and cooling elements.

8. (original) The apparatus of claim 7, further comprising a temperature controller coupled to the heat transfer element.

9. (original) The apparatus of claim 1, wherein the reflector includes a Bragg stack, whereby the saturable reflector is a saturable Bragg reflector (SBR).

10. (original) The apparatus of claim 1 wherein the reflector includes a metal or dielectric film.

11. (original) The apparatus of claim 1, wherein the substrate is between about 100 microns and 1000 microns thick.

C1
B3

12. **(currently amended)** A method for tuning a Saturable Reflector comprising the steps of:
a) providing an etalon comprising two opposing surfaces;

b) providing a substrate having a modified surface and a second surface;
c) providing a reflector deposited on the second surface of the substrate, wherein the reflector and the modified surface form said two opposing surfaces of said etalon; ~~at least partially by a substrate and at least one modified surface of two surfaces of said substrate;~~
~~b) depositing a reflector on one of said two surfaces that opposes said modified surface;~~
~~c) initially impinging said reflector with a light beam;~~ and
d) modifying ~~using said etalon to control~~ a spectrum of radiation entering said etalon through said reflector ~~of said light beam propagating through said reflector and through said substrate before reaching said at least one modified surface~~.

B3 end

13. **(currently amended)** The method of claim 12 wherein the modified surface ~~modifying step~~ comprises a surface polished ~~polishing at least one of the front and back surfaces~~ to within a quarter wavelength of light that will be used with the Saturable Reflector ~~SBR~~.

14. **(currently amended)** The method of claim 12 wherein the modified surface ~~modifying step~~ comprises ~~coating at least one of the front and back surfaces with~~ a reflective coating.

Sub C1

15. (previously amended) The method of claim 14 wherein the coating includes a metallic or a dielectric material.

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16. **(currently amended)** The method of claim 12, further comprising the step of tuning an ~~the~~ etalon effect of the etalon.

17. **(currently amended)** The method of claim 16 wherein the tuning step comprises adjusting an optical thickness between the ~~first and second surfaces~~ modified surface and the second surface of the substrate.

18. (previously amended) The method of claim 17 wherein the thickness is adjusted by controlling a temperature of the substrate.

Sub C1

19. **(currently amended)** The method of claim 18, wherein the tuning adjusts a length of an optical pulse that is incident on the saturable reflector ~~SBR~~.

B5

20. **(currently amended)** The method of claim 16, wherein the tuning optimizes a relation between temporal and frequency domains of radiation incident on the saturable reflector ~~SBR~~.

21. **(currently amended)** The method of claim 16 wherein the tuning adjusts a distribution of optical power amongst ~~two or more~~ a plurality of modes of radiation incident on the saturable reflector.

22. **(currently amended)** A laser comprising:
a) an optical cavity;
b) a lasing medium disposed within the optical cavity;
c) a pump configured to provide pump radiation to the lasing medium; and
d) a saturable reflector optically coupled to the cavity, wherein the saturable reflector includes

B5 end

i) an etalon comprising two opposing surfaces; ~~at least partially provided by~~
ii) a substrate comprising a modified surface and a second surface ~~and at least one modified surface of two surfaces of said substrate~~; and
iii) ~~ii)~~ a reflector deposited on said second surface of said substrate, ~~one of said two surfaces that opposes said modified surface~~ wherein said substrate is interposed between said two opposite surfaces, ~~such that an impinging light beam is initially propagating through said reflector and said substrate before reaching said at least one modified surface,~~ wherein the reflector includes a saturable absorber layer.

23. (previously amended) The laser of claim 22 further comprising a non-linear medium disposed within the cavity.

24. (previously amended) The laser of claim 23 wherein the nonlinear medium is a crystal containing a material chosen from the group consisting of Lithium Niobate ($LiNbO_3$), Lithium Tantalate ($LiTaO_3$), Lithium Borate ($LiBO_3$) periodically poled lithium niobate (PPLN), periodically poled lithium tantalate (PPLT) MgO:PPLN, KTP, PPKTP, RTA, BBO, MgO:LN, KTA, and PPRTA.

Sub C1 B6

25. **(currently amended)** The laser of claim 22 wherein the modified surface is a polished surface ~~surface that has been modified to enhance the etalon effect has been polished~~.

26. **(currently amended)** The laser of claim 22 wherein the modified surface comprises a coating ~~surface that has been modified includes a coating~~.

27. (previously amended) The laser of claim 26 wherein the coating includes a metallic or a dielectric material.

Sub C1 B7

28. **(currently amended)** The laser of claim 22, further comprising means for tuning ~~the~~ an etalon effect of the etalon.

29. **(currently amended)** The laser of claim 28 wherein the tuning means adjusts an optical thickness between said modified surface and said second surface ~~two surfaces~~ of the substrate.

30. (previously amended) The laser of claim 29 wherein the adjusting means comprises a heater element thermally coupled to the substrate.

31. (previously amended) The laser of claim 30, further comprising a temperature controller coupled to the heater element.

Sub C1 B8

32. **(currently amended)** The laser of claim 22 wherein the substrate has a thickness large enough such that the ~~substrate acts as an~~ etalon has ~~having~~ a free spectral range of the same order as a linewidth of the laser.

33. **(currently amended)** The laser of claim 32 wherein the free spectral range is on the order of ~~order~~ 1 GHz.

34. (previously amended) The laser of claim 22 wherein the reflector is a Bragg stack, whereby the saturable reflector is a saturable Bragg reflector (SBR).

35. (previously amended) The laser of claim 22, wherein the reflector includes a metallic or dielectric film.

36. (**currently amended**) The laser of claim 22, wherein the substrate <u>has a thickness</u> ~~is~~ between about 100 microns and 1000 microns ~~thick~~.